

CALIFORNIA REGIONAL WATER QUALITY CONTROL
BOARD SAN FRANCISCO BAY REGION

ORDER NO. 98-

ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS

**LAURENCE AND DIANE WEBSTER AND
EKOTEK, INC.**

for the property located

**4200 ALAMEDA AVENUE
OAKLAND
ALAMEDA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location:** The former Ekotek Lube site (the "Site") is located at 4200 Alameda Avenue in Oakland, Alameda County. The Site is about 0.8 acres in size. It is bordered on the west by Alameda Avenue, on the east-southeast by East 8th Street. The former American National Can Company site, now the location for a Super K-Mart, lies to the north. The distance to the Bay is more than 1500 feet

2. **Site History:** The Site was used for oil recycling from 1925 to 1981. It has been known by various names including "Bonus International, Inc Bayside Oil Company", "Fabian Oil Refining Company", "Economy Refining & Service Company", "Economy Byproducts & Economy Service Company", and "Ekotek Lube, Inc." Waste oil received by the facility primarily consisted of oils from automobiles, rail'road locomotives, aircraft, and electrical transfonners. Stoddard solvent was also reportedly recycled

Ekotek bears no relationship to any of the previous operators/owners of the Site. At this time, none of the parties previously associated with the Site could be located

Laurence and Diane Webster purchased the Site from Ekotek, Inc. in 1983 but have never operated on-site.

3. **Named Dischargers:** Laurence and Diane Webster are named as dischargers because they have owned the Site since 1983 and intend to develop it and implement the necessary actions specified in this Order. Ekotek, Inc., formerly known as Ekotek Lube, Inc., is named as a discharger because it owned the Site from 1978 to 1983 and operated an oil-recycling facility on-

Ekotek, Inc. will be responsible for compliance only if the Board or Executive Officer finds that other named dischargers have failed to comply with the requirements of this order.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this order.

4. Regulatory Status: This site is currently not subject to Board

5. Site Hydrogeology: The Site is located in the East Bay Plain Basin. Soils immediately underlying pavement on- and off-site consist of artificial fill extending to approximately 1.5 to 4 feet below ground surface (bgs). This artificial fill overlays a silty clay that extends to a depth of 6 to 15 feet bgs. Contained within this silty clay are 1 to 2 feet thick discontinuous lenses of clayey gravel and silty sand.

Located beneath the silty clay is the first water-bearing unit. This first water-bearing unit ranges in thickness from approximately 1 to 5 feet and consists of clayey sands, sandy gravel, and gravelly sand. Below this first water-bearing unit are clays and silty clays that extend to the maximum depth explored (i.e. 50 feet bgs). Interbedded in these clays and silts are thin discontinuous sand lenses. The thickest of these discontinuous sand lenses was encountered between 38 and 40 feet bgs and are 1 to 1.5 feet thick. These discontinuous sand lenses are considered the next deeper

Local groundwater flow direction is to the south, towards the San Leandro Bay. The depth to groundwater on-site has generally been between 7 and

6. Remedial Investigation: The former processing area was located on the eastern part of the Site. It consisted of an oily water sump and some underground storage tanks. There was also an above-grade tank farm on

The preliminary investigation conducted in July 1995 consisted of 10 soil borings. Five of the borings were converted into groundwater monitoring wells, MW-1 to MW-5. The main pollutants discovered were petroleum hydrocarbons and associated VOCs, chlorinated solvents, and PCBs. TPH-gasoline up to 4100 ppm, TPH-diesel up to 11,000 ppm, TPH-motor oil up to 15,000 ppm, and PCBs up to 27 ppm have been detected in the soil. The historic maximum concentrations detected in groundwater are 160,000 ppb of TPH-gasoline, 850,000 ppb of TPH-diesel, 800,000 ppb of TPH-motor oil, 630 ppb of benzene, and 5200 ppb of vinyl chloride.

Off-site soil and groundwater investigations were conducted in February 1996 and June 1997. Waste oil as separate phase hydrocarbons was

layer of groundwater as far as 50 feet from the Site. The petroleum hydrocarbons discovered were predominantly high molecular weight, with carbon chain lengths between C16 and C36, and should therefore be rather immobile. TPH was detected in two of the soil samples taken and most likely represented TPH in the saturated zone that had sorbed to soils. BTEX, other VOCs, and metals were either not detected or below

In the absence of any identified source for the off-site pollution and in light of its proximity to the Site, the off-site pollution is subject to the same cleanup plans as specified in this Order for the on-site pollution.

7. **Interim Remedial Measures:** Demolition of the majority of the aboveground tanks was performed in October and November 1995. Demolition of the remaining above-grade structures and removal of underground tanks and appurtenances (e.g., pipelines, sumps, catch basin, utilities) were conducted between March and July 1996. The Site was then graded and covered with two inches of asphalt and sloped to drain to gutters along Alameda Avenue and East 8th Street.

Oil liquids, debris, and other materials which were visually distinct from on-site soils were tested and determined to be non-RCRA hazardous wastes, prior to disposal at an approved facility. Some of the soils excavated were allowed to be worked back into the Site as para

Excavation was shown to be an economically infeasible means of remediation. According to the study, a large percentage of the Site would need to be excavated to address the full scope of the problem. In addition, due to the proximity of the former tank farm and processing area to the adjacent road ways, extensive shoring would be required. ARO estimated that the entire project, including excavation, shoring, and waste disposal, would cost in the range of \$1,800,000. Such costs are substantially in excess of the market value of the property.

A pump-and-treat system is not cost-effective either. The tight soils on-site would require an extensive network of low capacity extraction wells. The slow mass transfer of these relatively insoluble chemicals means that the system would have to be operated and maintained for a lengthy period of time at a substantial cost. Enhanced in-situ bioremediation would require the introduction of microorganism, trace nutrients, and, usually, oxygen to the subsurface. Unfortunately, due to the tight soils and magnitude of the pollution, this option would prove to be just as inefficient as pump-and-treat. Due to the limited space on-site, ex-situ bioremediation would not be a viable remediation option either. The feasibility study showed that passive hydrocarbon removal, combined with natural attenuation, is the most cost-effective means of reducing and containing the subsurface pollution. With placement of passive recovery wells on the property boundary and in the former release areas, on-site pollution is expected to stay put and abate in time.

The subsurface of the Site is mostly impacted by heavy-end petroleum hydrocarbons. With their tendency to adsorb to the tight soils such as those present at the Site, extensive migration off-site, if at all, is not expected. The installation of recovery wells on the perimeters should effectively reduce the presence of floating product on the property boundary and minimize spread of the pollution. Moreover, reduction of floating product renders the portion that remains more susceptible to biodegradation, and, in turn, accelerates the entire process of remediation.

The feasibility study did not examine remediation strategies for chlorinated solvents in the groundwater. One particular contaminant of concern is vinyl chloride due to its relatively mobile characteristic.

10. **Remediation and Risk Management Plan:** The July 2, 1998, RMP describes a passive hydrocarbon recovery system, coupled by risk management for the Site before, during, and after redevelopment. It also proposes the recordation of an Environmental Restriction and Covenant (ERC) with the deed of the Site. The ERC will limit future use of the Site and identify certain restrictions that will apply even to approved uses for

- a. **Proposed Groundwater Remediation Approach:** The proposed remediation approach consists of a series of dual purpose groundwater monitoring/separate phase hydrocarbons recovery wells spaced around the perimeter. Seven on-site and two off-site wells will be constructed. Three of them will be between existing wells MW-1 and MW-4 to cover the former processing area, and three more between MW-4 and MW-3 to address the tank farm area. One new well will be located between MW-1 and MW-2 to monitor upgradient conditions. All five existing wells will be retrofitted for product recovery as well. Nonetheless, if MW-5 is in the way of site improvements, it will be abandoned and replaced with a new well as close to the former location as practical. This well is important because it has historically shown the greatest depth of

Two off-site wells on the corner of East 8th Street and Alameda Avenue will also be installed. These wells are intended to remediate and monitor the off-site subsurface conditions

All wells will be fitted with a passive product recovery device consisting of a hydrocarbon absorbent polymer. The spent absorbents will be replaced with fresh ones periodically. Groundwater samples will also be taken and monitored on a regular schedule as specified in the Self Monitoring Program. Closure of these wells will be contingent upon a consistent absence of floating product, favorable results from a sound fate and transport study of the Site's pollutants, and confirmation of these results with additional sampling. For the purposes of the Self Monitoring Program, the word "consistent" shall mean two or more consecutive sampling events not less than one year apart. The words "absence of floating product" shall refer to the lack of a visible sheen and no evidence of capture on the passive product recovery device. The premise is that a stable or diminishing plume of dissolved hydrocarbons will be achieved at the point when there is no longer any evidence of free product in the monitoring wells and water quality parameters show evidence of natural attenuation. The existence of a sufficient amount of dissolved oxygen and other inorganic indicators in the

- b. **Proposed Risk Management Plan:** Pre-redevelopment risk management plan calls for maintaining the integrity of the pavement cover and present fencing to minimize unauthorized access to the

Risk management during redevelopment includes implementation of site specific health and safety worker planning requirements and safety plans (HASP), construction impact mitigation measures, minimization of groundwater conduit creation, and soil management

The HASPs will be submitted to Alameda County Environmental Health Department prior to commencement of work. The construction impact mitigation measures consist of site security, dust control, storm water runoff control, and decontamination procedures. The RMP also lists precautions to be taken during construction to prevent the creation of groundwater conduits. Lastly, soil management protocols provide guidance for the excavating and

Risk management after redevelopment includes maintaining a cap on the Site, establishing protocols for future subsurface development, preventing the use of groundwater under the Site, and establishing a notification procedure to ensure long term compliance

C. Proposed Environmental Restriction and Covenant: The proposed engineering controls include maintenance of a cover or cap over the Site, installation of vapor barriers in the foundations of all improvements constructed on the Site, and such other measures as may be specified in the RMP, as it may be amended from time to

The proposed institutional restrictions would preclude use of the Site as a residence, hospital for humans, and school for persons under 21 years of age or a day care center for children. Use of the groundwater for drinking, irrigation, industrial water supply, or any other purpose without the prior written consent of the Regional

Risk Assessment: Waterstone Environmental, L.L.C. prepared a Human Health Risk Assessment Report (HHRA) in April 1998 for the Site. The Site is currently fenced and completely covered with asphalt paving. It is assumed that the Site will be redeveloped for commercial uses. Such uses may include but are not limited to restaurants, convenience stores or retail outlets. It is further assumed that the entire Site will be covered with buildings, asphalt parking lots, or planter strips with imported soil.

The two future potential receptors considered are commercial building occupants and maintenance personnel. The exposure pathways evaluated include inhalation of vapors from soil or groundwater to indoor air for commercial building occupants, and soil ingestion, dermal contact with soil and groundwater, dust inhalation of non-volatiles from soil, and inhalation of vapors from soil or groundwater to outdoor air for maintenance

The estimated risks for these populations are within the acceptable risk range. The total non-carcinogenic hazard index for exposure to COCs in soil and groundwater is 0.04 for future commercial building occupants and 0.06 for future maintenance workers. The total estimated lifetime incremental carcinogenic risk for exposure to COCs is 9.6×10^{-6} for future commercial building occupants and 5.4×10^{-6} for future maintenance workers.

For comparison, the Board considers the following risks to be acceptable at remediation sites: a hazard index of 1.0 or less for non-carcinogens, and an excess cancer risk of 104 or less for carcinogens.

The implementation of institutional and engineering controls such as those listed in the proposed ERC would further minimize the potential of exposure through pathways not considered in the assessment.

Risk management prior to, during, and after redevelopment is necessary in order to ensure the health and safety for construction workers, maintenance personnel, and others that might come into contact with the Site. Appropriate risk management would also prevent the further deterioration of both above- and sub-surface environmental conditions.

12. Basis for Cleanup Standards

- a. **General:** State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b. **Beneficial Uses:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or

18. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers (or their agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B CLEANUP PLAN AND CLEANUP STANDARDS

1. **Implement Remediation and Risk Management Plan:** The dischargers shall implement the Remediation and Risk Management Plan described in finding 10, as augmented by Tasks
2. **Groundwater Cleanup Standards:** The following groundwater cleanup standards shall be met in all wells identified in the Self-Monitoring Program:

Constituent	Cleanup Standard (ug/l)	Basis
Benzene	1	California MCL
Toluene	150	California MCL
Ethylbenzene	700	California MCL
Xylene	1,750	California MCL
Vinyl Chloride	0.	California MCL

1. SUBMITTAL OF A FEASIBILITY STUDY

COMPLIANCE DATE:

Submit an addendum examining available remediation strategies for chlorinated solvents in the groundwater on-site. A detailed explanation supported by sufficient evidence shall be provided if

IMPLEMENTATION OF INSTITUTIONAL

COMPLIANCE DATE: 60 days after Executive Officer approval but

Submit a technical report acceptable to the Executive Officer documenting that the July 2, 1998 proposed Environmental Restriction and Covenant

IMPLEMENTATION OF PASSIVE

COMPLIANCE DATE: Within 120 days of completion of site construction but no later

Submit a technical report acceptable to the Executive Officer documenting installation of the hydrocarbons recovery wells. This report should also present results of groundwater elevation, floating

WORKPLAN FOR

COMPLIANCE DATE: 45 days prior to proposed

Submit a workplan acceptable to the Executive Officer for sampling of soils intended for excavation during site improvements. The workplan should delineate the soil to be excavated. Sampling method(s) and frequency should be described and

COMPLETION OF SOIL SAMPLING AND SITE

COMPLIANCE DATE: 45 days after the completion of

Submit a technical report acceptable to the Executive Officer documenting completion of tasks

6 PROPOSED

COMPLIANCE DATE: 60 days prior to proposed

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g. well abandonment), system suspension (e.g. cease passive recovery but wells retained for monitoring only), and significant system modification (e.g. closure of individual

7 IMPLEMENTATION OF

COMPLIANCE DATE: 60 days after Executive

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in

8. EVALUATION OF NEW HEALTH

COMPLIANCE DATE: 90 days after requested by

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved cleanup plan of revising one or more cleanup standards in response to revision of drinking water standards,

9. EVALUATION OF NEW TECHNICAL

COMPLIANCE DATE: 90 days after requested by

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved cleanup plan and cleanup standards for this site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably

10. **Delayed Compliance:** If the dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the dischargers shall promptly notify the Executive Officer

D

No Nuisance: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water

2. **Good O&M:** The dischargers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve

3. **Cost Recovery:** The dischargers shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial actions. (3.1.9(i)5. h c 8 t 9 ,

geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision

8. **Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the

a. Alameda County Environmental

The Executive Officer may modify this

9. **Reporting of Changed Owner or Operator:** Laurence and Diane Webster shall file a technical report on any changes in site occupancy or ownership

10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the dischargers shall report such discharge to the Regional Board by calling

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the

11. **Secondarily-Responsible Discharger:** Within 60 days after being notified by the Executive Officer that other named dischargers have failed to comply with this order, Ekotek, Inc., as the secondarily-

12. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region. on

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350 OR REFERRAL TO THE

Attachments: Site
Map

CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD SAN FRANCISCO BAY

SFI F-MONITORING

LAURENCE AND DIANE
WEBSTER AND EKOTEK,

for the

4200
ALAMEDA
AVENUE

1 **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance

2. **Monitoring:** The dischargers shall measure groundwater elevations in all monitoring wells and collect and analyze representative samples of groundwater according to the

Well	Sampling	Analyses	Well	Sampling	Analyses
	Frequency			Frequency	
MW-1	Q*	8015/8240	MW-8**	Q*	8015/8240
MW-2	Q*	8015/8240	MW-9**	Q*	8015/8240
MW-3	Q*	8015/8240	MW-	Q*	8015/8240
			10**		
MW-4	Q*	8015/8240	MW-	Q*	8015/8240
			11**		
MW-5	Q*	8015/8240	MW-	Q*	8015/8240
			12**		
MW-6**	Q*	8015/8240	MW-	Q*	8015/8240
			13***		
MW-7	Q*	8015/8240	MW-	Q*	8015/8240
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Key: Q = Quarterly 8015/8240 = Modified EPA Method
8015 or

* The sampling frequency will be quarterly for the first year and semi-annually (March and October) for the second and third years. The dischargers may propose a further reduction to annual monitoring for the fourth and following years, assuming that the data remain stable. Any proposed changes, however, are subject to Executive Officer approval.

3. Quarterly Monitoring Reports: The dischargers shall submit quarterly monitoring reports to the Board no later than 30 days following the end of the quarter (e.g. report for first quarter of the year due April 30). The due date of the first quarterly monitoring report, however, shall be the time

a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the dischargers' principal executive officer or their duly authorized representative, and shall include a statement by the

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical

Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the fourth quarterly report each year as well as free product thickness and historical and annual mass removal. The report shall describe any significant increases

d. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g. free product recovery) and work planned for

4. Semi-Annual Monitoring Reports: The dischargers shall submit semi-annual monitoring reports to the Board no later than April 30 for the first report and November 30 for

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